AMENDMENTS TO THE CLAIMS

1. (Currently amended) A video-encoding device for encoding video signals and exerts control over the encoding according to an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated through the encoding and the amount of codes transferred to an output destination, the video-encoding device comprising:

recording-mode determination means for determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible and setting an initial value of the occupied amount of the virtual buffer based on the determination result,

wherein the recording-mode determination means determines an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where the seamless connection is feasible, and sets the initial value of the occupied amount of the virtual buffer to zero, where the seamless connection is infeasible;

occupied-amount update means for updating the occupied amount of the virtual buffer every time the encoding is performed,

wherein the occupied-amount update means determines a predetermined value that is obtained by subtracting the code-for-transfer amount from the occupied amount and adding the generated-code amount to the occupied amount and that is not larger than the maximum value of the virtual buffer to be a new occupied amount, where the occupied amount is larger than the code-for-transfer amount, and determines the generated-code amount to be the new occupied amount, where the occupied amount is equivalent to the code-for-transfer amount or less;

optimum-occupied-amount calculation means for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

target-code-amount calculation means for calculating a predetermined target-code amount based on the video signals of the following chapter;

target-code-amount adjustment means for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount; and

encoding means for performing the encoding based on the adjusted target code amount.

2. (Canceled)

3. (Canceled)

4. (Currently amended) The video-encoding device according to Claim ~~2~~1, wherein the optimum-occupied-amount calculation means calculates a predetermined value that is equivalent to and/or as large as the updated occupied amount of the virtual buffer, as the optimum occupied amount.

5. (Currently amended) A video-encoding control device for exerting control over encoding based on an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of codes transferred to an output destination, the video-encoding control device comprising:

recording-mode determination means for determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible and setting an initial value of the occupied amount of the virtual buffer based on the determination result,

wherein the recording-mode determination means determines an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where the seamless connection is feasible, and sets the initial value of the occupied amount of the virtual buffer to zero, where the seamless connection is infeasible;

occupied-amount update means for updating the occupied amount of the virtual buffer every time the encoding is performed,

wherein the occupied-amount update means determines a predetermined value that is obtained by subtracting the code-for-transfer amount from the occupied amount and adding the generated-code amount to the occupied amount and that is not larger than the maximum value of the virtual buffer to be a new occupied amount, where the occupied amount is larger than the code-for-transfer amount, and determines the generated-code amount to be the new occupied amount, where the occupied amount is equivalent to the code-for-transfer amount or less;

optimum-occupied-amount calculation means for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

target-code-amount calculation means for calculating a predetermined target-code amount based on the video signals of the following chapter; and

target-code-amount adjustment means for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount and using the adjusted target code amount for the encoding.

6. (Original) The video-encoding control device according to Claim 5, wherein the recording-mode determination means determines an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where the seamless connection is feasible, and sets the initial value of the occupied amount of the virtual buffer to zero, where the seamless connection is infeasible.

7. (Currently amended) A computer implemented video-encoding control method for exerting control over encoding based on an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of codes transferred to an output destination, the video-encoding control method comprising:

determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible by determining that an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where the seamless connection is feasible, and sets the initial value of the occupied amount of the virtual buffer to zero, where the seamless connection is infeasible;

setting an initial value of the occupied amount of the virtual buffer based on the determination result;

updating the occupied amount of the virtual buffer every time the encoding is performed by updating a predetermined value that is obtained by subtracting the code-for-transfer amount from the occupied amount and adding the generated-code amount to the occupied amount and that is not larger than the maximum value of the virtual buffer to be a new occupied amount, where the occupied amount is larger than the code-for-transfer amount, and determines the generated-code amount to be the new occupied amount, where the occupied amount is equivalent to the code-for-transfer amount or less;

calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

calculating a predetermined target-code amount based on the video signals of the following chapter; and

adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount and using the adjusted target code amount for the encoding.

8. (Currently amended) A computer implemented video-encoding control method for exerting control over encoding based on an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of codes transferred to an output destination, the video-encoding control method comprising:

determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible;

determining an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where it is determined that the seamless connection is feasible based on the determination result, and setting the initial value of the occupied amount of the virtual buffer to zero, where it is determined that the seamless connection is infeasible;

updating the occupied amount of the virtual buffer every time the encoding is performed by updating a predetermined value that is obtained by subtracting the code-for-transfer amount from the occupied amount and adding the generated-code amount to the occupied amount and that is not larger than the maximum value of the virtual buffer to be a new occupied amount, where the occupied amount is larger than the code-for-transfer amount, and determines the generated-code amount to be the new occupied amount, where the occupied amount is equivalent to the code-for-transfer amount or less;

calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

calculating a predetermined target-code amount based on the video signals of the following chapter; and

adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount and using the adjusted target code amount for the encoding.

9. (Currently amended) A computer program product comprising a tangible computer readable medium including program code thereon, for exerting control over encoding based on an occupied

amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of codes transferred to an output destination, the program code being executable to perform operations comprising:

determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible by determining that an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where the seamless connection is feasible, and sets the initial value of the occupied amount of the virtual buffer to zero, where the seamless connection is infeasible;

determining an initial value of the occupied amount of the virtual buffer based on the determination result;

updating the occupied amount of the virtual buffer every time the encoding is performed by updating a predetermined value that is obtained by subtracting the code-for-transfer amount from the occupied amount and adding the generated-code amount to the occupied amount and that is not larger than the maximum value of the virtual buffer to be a new occupied amount, where the occupied amount is larger than the code-for-transfer amount, and determines the generated-code amount to be the new occupied amount, where the occupied amount is equivalent to the code-for-transfer amount or less;

calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

calculating a predetermined target-code amount based on the video signals of the following chapter; and

adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount and using the adjusted target code amount for the encoding.

10. (Currently amended) A computer program product comprising a tangible computer readable medium including program code thereon, for exerting control over encoding based on an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of codes transferred to an output destination, the program code being executable to perform operations comprising:

determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible;

determining an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where it is determined that the seamless connection is feasible based on the determination result, and setting the initial value of the occupied amount of the virtual buffer to zero, where it is determined that the seamless connection is infeasible;

updating the occupied amount of the virtual buffer every time the encoding is performed by updating a predetermined value that is obtained by subtracting the code-for-transfer amount from the occupied amount and adding the generated-code amount to the occupied amount and that is not larger than the maximum value of the virtual buffer to be a new occupied amount,

where the occupied amount is larger than the code-for-transfer amount, and determines the generated-code amount to be the new occupied amount, where the occupied amount is equivalent to the code-for-transfer amount or less;

calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

calculating a predetermined target-code amount based on the video signals of the following chapter; and

adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount and using the adjusted target code amount for the encoding.